Experiment Number: 92004-01
Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Test Compound: NTP 91/92 diet study **CAS Number:** DIET9192

Date Report Requested: 10/20/2014 Time Report Requested: 18:17:02

First Dose M/F: NA / NA

Lab: NIEHS

C Number: C92004

Lock Date: Not Entered.

Cage Range: All

Date Range: All

Reasons For Removal:

Removal Date Range: All

Treatment Groups: All

Study Gender: Both

PWG Approval Date NONE

Test Compound: NTP 91/92 diet study

CAS Number: DIET9192

Date Report Requested: 10/20/2014 Time Report Requested: 18:17:02

First Dose M/F: NA / NA

Lab: NIEHS

F 344/N Rat MALE	07M	91M	92M
Disposition Summary			
Animals Initially In Study	60	60	60
Early Deaths			
Moribund Sacrifice	1	1	
Natural Death	3	5	8
Survivors			
Moribund Sacrifice	21	16	15
Natural Death	12	6	7
Terminal Sacrifice	23	32	30
Animals Examined Microscopically	58	60	56
ALIMENTARY SYSTEM			
Liver	(57)	(60)	(56)
Angiectasis	4 (7%)		1 (2%)
Basophilic Focus	10 (18%)	18 (30%)	17 (30%)
Bile Duct, Fibrosis	1 (2%)		
Bile Duct, Hyperplasia	29 (51%)	46 (77%)	35 (63%)
Centrilobular, Degeneration	11 (19%)	7 (12%)	6 (11%)
Centrilobular, Fatty Change	11 (19%)	8 (13%)	8 (14%)
Clear Cell Focus	1 (2%)	6 (10%)	3 (5%)
Congestion	1 (2%)		1 (2%)
Cyst		1 (2%)	
Degeneration		1 (2%)	1 (2%)
Degeneration, Cystic	24 (42%)	8 (13%)	14 (25%)
Eosinophilic Focus	9 (16%)	17 (28%)	20 (36%)
Fatty Change	1 (2%)		
Hemorrhage		1 (2%)	
Hepatodiaphragmatic Nodule			1 (2%)
Hyperplasia	1 (2%)	1 (2%)	1 (2%)
Hyperplasia, Focal		1 (2%)	

Experiment Number: 92004-01

Species/Strain: Rat/F 344/N

Test Type: CHRONIC

a - Number of animals examined microscopically at site and number of animals with lesion

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Test Type: CHRONIC Species/Strain: Rat/F 344/N Test Compound: NTP 91/92 diet study
CAS Number: DIET9192

Date Report Requested: 10/20/2014 Time Report Requested: 18:17:02

First Dose M/F: NA / NA

F 344/N Rat MALE	07M	91 M	92M
Infiltration Cellular, Lymphocyte	1 (2%)		
Inflammation, Chronic		10 (17%)	2 (4%)
Necrosis	3 (5%)	4 (7%)	6 (11%)
Necrosis, Focal	1 (2%)		
Oval Cell, Hyperplasia		1 (2%)	
Periportal, Fatty Change	2 (4%)	2 (3%)	3 (5%)
Mesentery	(8)	(4)	(5)
Artery, Inflammation, Chronic	1 (13%)		
Fat, Necrosis	5 (63%)	3 (75%)	4 (80%)
Thrombosis			1 (20%)
Pancreas	(56)	(59)	(52)
Acinus, Degeneration	30 (54%)	28 (47%)	22 (42%)
Acinus, Hyperplasia	4 (7%)	4 (7%)	1 (2%)
Artery, Polyarteritis	1 (2%)		
Atrophy	2 (4%)		
Hyperplasia			1 (2%)
Inflammation, Chronic			1 (2%)
Polyarteritis		1 (2%)	2 (4%)
Salivary Glands	(0)	(0)	(1)
Stomach, Forestomach	(4)	(0)	(0)
Inflammation, Chronic	1 (25%)		
Ulcer	2 (50%)		
Stomach, Glandular	(1)	(0)	(0)
Tongue	(1)	(0)	(0)
CARDIOVASCULAR SYSTEM			
Heart	(57)	(60)	(56)
Cardiomyopathy	3 (5%)	6 (10%)	4 (7%)
Congestion		1 (2%)	
Fibrosis	12 (21%)	5 (8%)	5 (9%)
Inflammation, Chronic		1 (2%)	•

a - Number of animals examined microscopically at site and number of animals with lesion

Test Compound: NTP 91/92 diet study

Species/Strain: Rat/F 344/N CAS Number: DIET9192

Experiment Number: 92004-01

Test Type: CHRONIC

Date Report Requested: 10/20/2014 Time Report Requested: 18:17:02 First Dose M/F: NA / NA

F 344/N Rat MALE	07M	91M	92M
Mineralization	1 (2%)		
Necrosis	1 (2%)		
Thrombosis	3 (5%)	4 (7%)	1 (2%)
ENDOCRINE SYSTEM			
Adrenal Cortex	(56)	(60)	(56)
Atrophy			1 (2%)
Congestion	1 (2%)		
Hyperplasia	6 (11%)	9 (15%)	8 (14%)
Hyperplasia, Focal	1 (2%)		1 (2%)
Hypertrophy	1 (2%)	1 (2%)	1 (2%)
Infiltration Cellular, Lymphocyte	1 (2%)		
Metaplasia, Osseous			1 (2%)
Necrosis	2 (4%)		
Vacuolization Cytoplasmic, Diffuse	5 (9%)	6 (10%)	5 (9%)
Vacuolization Cytoplasmic, Focal	4 (7%)	8 (13%)	1 (2%)
Adrenal Medulla	(56)	(60)	(56)
Angiectasis		1 (2%)	
Hyperplasia	14 (25%)	11 (18%)	7 (13%)
Hyperplasia, Focal	1 (2%)		
Infiltration Cellular, Lymphocyte	1 (2%)		
Thrombosis	2 (4%)	2 (3%)	
Islets, Pancreatic	(56)	(59)	(52)
Hyperplasia	2 (4%)	3 (5%)	3 (6%)
Parathyroid Gland	(36)	(41)	(40)
Hyperplasia	6 (17%)		1 (3%)
Pituitary Gland	(55)	(58)	(56)
Pars Distalis, Angiectasis	5 (9%)	1 (2%)	1 (2%)
Pars Distalis, Cyst	7 (13%)	4 (7%)	4 (7%)
Pars Distalis, Hyperplasia	9 (16%)	10 (17%)	10 (18%)
Thyroid Gland	(51)	(58)	(56)

a - Number of animals examined microscopically at site and number of animals with lesion

Species/Strain: Rat/F 344/N

Test Type: CHRONIC

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Test Compound: NTP 91/92 diet study

CAS Number: DIET9192

Date Report Requested: 10/20/2014 Time Report Requested: 18:17:02

First Dose M/F: NA / NA

F 344/N Rat MALE	07M	91M	92M
C Cell, Hyperplasia	14 (27%)	7 (12%)	7 (13%)
Fibrosis			1 (2%)
Follicle, Cyst	2 (4%)		
Inflammation, Chronic			1 (2%)
GENERAL BODY SYSTEM			
Peritoneum	(1)	(0)	(2)
GENITAL SYSTEM			
Penis	(1)	(0)	(0)
Preputial Gland	(5)	(3)	(3)
Inflammation, Chronic	1 (20%)	1 (33%)	
Seminal Vesicle	(2)	(3)	(5)
Atrophy	2 (100%)	3 (100%)	5 (100%)
Testes	(56)	(60)	(56)
Atrophy	1 (2%)		
Bilateral, Hyperplasia			1 (2%)
Bilateral, Interstit Cell, Hyperplasia	3 (5%)	5 (8%)	2 (4%)
Bilateral, Seminif Tub, Degeneration	1 (2%)	1 (2%)	2 (4%)
Interstit Cell, Hyperplasia	7 (13%)	6 (10%)	8 (14%)
Interstit Cell, Inflammation, Acute	1 (2%)		
Interstit Cell, Seminif Tub, Degeneration	1 (2%)		
HEMATOPOIETIC SYSTEM			
Lymph Node	(1)	(1)	(2)
Lymph Node, Mandibular	(2)	(0)	(1)
Lymph Node, Mesenteric	(56)	(57)	(54)
Hemorrhage	1 (2%)	1 (2%)	1 (2%)
Hyperplasia, Lymphoid	1 (2%)		1 (2%)
Spleen	(57)	(59)	(56)
Fibrosis	4 (7%)	9 (15%)	6 (11%)
Hematopoietic Cell Proliferation	3 (5%)	2 (3%)	4 (7%)

a - Number of animals examined microscopically at site and number of animals with lesion

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

Test Compound: NTP 91/92 diet study

CAS Number: DIET9192

Date Report Requested: 10/20/2014 Time Report Requested: 18:17:02

First Dose M/F: NA / NA

F 344/N Rat MALE	07M	91M	92M
Hyperplasia, Lymphoid			1 (2%)
Inflammation, Acute	1 (2%)		1 (2%)
Necrosis	1 (2%)		
Pigmentation, Hemosiderin	2 (4%)	1 (2%)	1 (2%)
Thymus	(30)	(46)	(38)
Atrophy	27 (90%)	40 (87%)	32 (84%)
Hemorrhage			1 (3%)
NTEGUMENTARY SYSTEM			
Mammary Gland	(5)	(1)	(3)
Skin	(10)	(9)	(3)
Hair Follicle, Atrophy	1 (10%)		
Hyperkeratosis		1 (11%)	
MUSCULOSKELETAL SYSTEM			
Bone	(0)	(0)	(1)
NERVOUS SYSTEM			
Brain	(1)	(1)	(0)
Hemorrhage	1 (100%)	1 (100%)	
Mineralization		1 (100%)	
Brain, Cerebellum	(1)	(0)	(1)
Hemorrhage			1 (100%)
Brain, Cerebrum	(0)	(1)	(0)
Hemorrhage		1 (100%)	
RESPIRATORY SYSTEM			
Lung	(57)	(59)	(56)
Alveolar Epith, Hyperplasia	,	,	1 (2%)
Alveolus, Infiltration Cellular, Histiocyte	7 (12%)	3 (5%)	3 (5%)
Artery, Mineralization	46 (81%)	50 (85%)	52 (93%)
Congestion	4 (7%)	1 (2%)	1 (2%)

a - Number of animals examined microscopically at site and number of animals with lesion

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Test Type: CHRONIC Species/Strain: Rat/F 344/N Test Compound: NTP 91/92 diet study
CAS Number: DIET9192

Date Report Requested: 10/20/2014 Time Report Requested: 18:17:02

First Dose M/F: NA / NA

F 344/N Rat MALE	07M	91M	92M
Fibrosis			1 (2%)
Hemorrhage	3 (5%)	3 (5%)	
Hyperplasia			1 (2%)
Hyperplasia, Adenomatous	4 (7%)	8 (14%)	5 (9%)
Inflammation, Chronic	10 (18%)	9 (15%)	5 (9%)
Pigmentation, Hematoidin	1 (2%)		
Thrombosis	1 (2%)	1 (2%)	
SPECIAL SENSES SYSTEM			
Zymbal's Gland	(0)	(1)	(1)
JRINARY SYSTEM			
Kidney	(57)	(60)	(56)
Congestion	1 (2%)		
Cyst	2 (4%)	2 (3%)	1 (2%)
Hydronephrosis	2 (4%)		1 (2%)
Hyperplasia, Tubular	2 (4%)		
Infiltration Cellular, Lymphocyte			1 (2%)
Inflammation, Chronic	1 (2%)		
Mineralization	1 (2%)	1 (2%)	
Necrosis	1 (2%)		
Nephropathy	55 (96%)	46 (77%)	51 (91%)
Pigmentation	17 (30%)	8 (13%)	10 (18%)
Renal Tubule, Degeneration		2 (3%)	
Renal Tubule, Hyperplasia	1 (2%)		
Vacuolization Cytoplasmic		1 (2%)	
Urinary Bladder	(55)	(59)	(52)
Hemorrhage	1 (2%)		
Hyperplasia			1 (2%)
Infiltration Cellular, Lymphocyte	11 (20%)	13 (22%)	18 (35%)
Inflammation, Acute			1 (2%)

a - Number of animals examined microscopically at site and number of animals with lesion

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Test Type: CHRONIC

Test Compound: NTP 91/92 diet study

Species/Strain: Rat/F 344/N

CAS Number: DIET9192

Date Report Requested: 10/20/2014

Time Report Requested: 18:17:02 First Dose M/F: NA / NA

Lab: NIEHS

	F 344/N Rat MALE	07M	91M	92M
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END OF MALE DATA

Test Type: CHRONIC

Species/Strain: Rat/F 344/N

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Test Compound: NTP 91/92 diet study

CAS Number: DIET9192

Date Report Requested: 10/20/2014 Time Report Requested: 18:17:02

First Dose M/F: NA / NA

F 344/N Rat FEMALE	07F	91F	92F
Disposition Summary			
Animals Initially In Study	60	60	60
Early Deaths			
Moribund Sacrifice	2	2	
Natural Death	6	3	6
Survivors			
Moribund Sacrifice	11	13	10
Natural Death	10	5	7
Terminal Sacrifice	31	37	37
Animals Examined Microscopically	56	60	59
ALIMENTARY SYSTEM			
Intestine Large, Cecum	(0)	(0)	(1)
Intestine Large, Colon	(1)	(0)	(0)
Inflammation, Chronic	1 (100%)		
Perforation	1 (100%)		
Liver	(56)	(56)	(59)
Angiectasis	2 (4%)		
Basophilic Focus	41 (73%)	46 (82%)	45 (76%)
Bile Duct, Hyperplasia	2 (4%)	3 (5%)	1 (2%)
Centrilobular, Degeneration	2 (4%)		3 (5%)
Centrilobular, Fatty Change	7 (13%)	2 (4%)	2 (3%)
Clear Cell Focus	4 (7%)	2 (4%)	6 (10%)
Congestion	1 (2%)		
Degeneration		1 (2%)	
Eosinophilic Focus	1 (2%)	8 (14%)	5 (8%)
Fatty Change			1 (2%)
Hematopoietic Cell Proliferation	2 (4%)		
Hepatodiaphragmatic Nodule	2 (4%)	1 (2%)	5 (8%)
Hyperplasia	1 (2%)		

a - Number of animals examined microscopically at site and number of animals with lesion

Test Type: CHRONIC Test Compound: NTP 91/92 diet study Species/Strain: Rat/F 344/N CAS Number: DIET9192

Experiment Number: 92004-01

First Dose M/F: NA / NA

Lab: NIEHS

Date Report Requested: 10/20/2014

Time Report Requested: 18:17:02

F 344/N Rat FEMALE	07F	91F	92F
Infiltration Cellular, Lymphocyte	1 (2%)		
Infiltration Cellular, Polymorphnuclr		1 (2%)	
Inflammation, Chronic	11 (20%)	24 (43%)	13 (22%)
Necrosis	2 (4%)	2 (4%)	2 (3%)
Periportal, Fatty Change	2 (4%)	4 (7%)	3 (5%)
Vacuolization Cytoplasmic	1 (2%)		
Vacuolization Cytoplasmic, Focal	1 (2%)		
Mesentery	(2)	(3)	(2)
Fat, Necrosis	1 (50%)	3 (100%)	2 (100%)
Pancreas	(55)	(58)	(57)
Acinus, Degeneration	27 (49%)	14 (24%)	17 (30%)
Infiltration Cellular, Lymphocyte		1 (2%)	
Inflammation, Acute	1 (2%)		
Stomach, Forestomach	(0)	(1)	(0)
Stomach, Glandular	(0)	(1)	(0)
CARDIOVASCULAR SYSTEM			
Heart	(56)	(57)	(59)
Cardiomyopathy	5 (9%)	4 (7%)	2 (3%)
Fibrosis	2 (4%)		1 (2%)
Thrombosis	2 (4%)		
Valve, Inflammation, Chronic	1 (2%)		
ENDOCRINE SYSTEM			
Adrenal Cortex	(56)	(58)	(59)
Angiectasis		1 (2%)	1 (2%)
Congestion	2 (4%)		
Degeneration			1 (2%)
Hyperplasia	9 (16%)	16 (28%)	15 (25%)
Hypertrophy	1 (2%)	5 (9%)	1 (2%)
Necrosis		1 (2%)	

a - Number of animals examined microscopically at site and number of animals with lesion

P03: INCID

Experiment Number: 92004-01

Species/Strain: Rat/F 344/N

Test Type: CHRONIC

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Test Compound: NTP 91/92 diet study

CAS Number: DIET9192

Date Report Requested: 10/20/2014 Time Report Requested: 18:17:03 First Dose M/F: NA / NA

F 344/N Rat FEMALE	07F	91F	92F
Vacuolization Cytoplasmic, Diffuse	4 (7%)		2 (3%)
Vacuolization Cytoplasmic, Focal	4 (7%)	3 (5%)	7 (12%)
Adrenal Medulla	(55)	(58)	(58)
Hyperplasia	2 (4%)		2 (3%)
Hyperplasia, Focal			1 (2%)
Islets, Pancreatic	(55)	(58)	(57)
Hyperplasia	1 (2%)		2 (4%)
Parathyroid Gland	(36)	(40)	(37)
Fibrosis		1 (3%)	
Pituitary Gland	(55)	(57)	(57)
Pars Distalis, Angiectasis	9 (16%)	2 (4%)	8 (14%)
Pars Distalis, Cyst	12 (22%)	20 (35%)	14 (25%)
Pars Distalis, Hyperplasia	13 (24%)	13 (23%)	15 (26%)
Pars Distalis, Pigmentation, Hemosiderin	1 (2%)	1 (2%)	
Pigmentation, Hemosiderin		1 (2%)	
Thyroid Gland	(54)	(55)	(56)
C Cell, Hyperplasia	10 (19%)	8 (15%)	7 (13%)
Follicle, Cyst		2 (4%)	1 (2%)
Ultimobranchial Cyst	1 (2%)		1 (2%)
SENERAL BODY SYSTEM None			
SENITAL SYSTEM			
Clitoral Gland	(7)	(5)	(7)
Cyst		1 (20%)	
Hyperplasia	1 (14%)		
Ovary	(55)	(57)	(59)
Congestion	1 (2%)		
Cyst	8 (15%)	5 (9%)	8 (14%)
Interstit Cell, Hyperplasia		1 (2%)	

a - Number of animals examined microscopically at site and number of animals with lesion

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Test Compound: NTP 91/92 diet study

Species/Strain: Rat/F 344/N

Test Type: CHRONIC

CAS Number: DIET9192

Date Report Requested: 10/20/2014 Time Report Requested: 18:17:03

First Dose M/F: NA / NA

F 344/N Rat FEMALE	07F	91F	92F
Uterus	(52)	(57)	(59)
Bilateral, Dilatation	4 (8%)	1 (2%)	2 (3%)
Dilatation	3 (6%)	7 (12%)	5 (8%)
Endometrium, Cyst		1 (2%)	
Inflammation, Acute		1 (2%)	
Serosa, Cyst	1 (2%)		
HEMATOPOIETIC SYSTEM			
Lymph Node, Mesenteric	(56)	(58)	(59)
Amyloid Deposition	1 (2%)		
Hemorrhage	2 (4%)	3 (5%)	
Hyperplasia, Lymphoid	1 (2%)		
Infiltration Cellular, Histiocyte			1 (2%)
Inflammation, Acute	1 (2%)		
Spleen	(56)	(58)	(59)
Fibrosis	3 (5%)		1 (2%)
Hematopoietic Cell Proliferation	6 (11%)	5 (9%)	2 (3%)
Inflammation, Acute			1 (2%)
Pigmentation, Hemosiderin	13 (23%)	17 (29%)	14 (24%)
Thymus	(40)	(39)	(40)
Atrophy	36 (90%)	38 (97%)	38 (95%)
Cyst		1 (3%)	1 (3%)
INTEGUMENTARY SYSTEM			
Mammary Gland	(29)	(26)	(26)
Galactocele			2 (8%)
Hyperplasia	1 (3%)	1 (4%)	2 (8%)
Hyperplasia, Atypical		1 (4%)	
Skin	(4)	(2)	(3)
Inflammation, Acute	1 (25%)	1 (50%)	
Subcut Tiss, Necrosis	1 (25%)		

a - Number of animals examined microscopically at site and number of animals with lesion

Species/Strain: Rat/F 344/N

Test Type: CHRONIC

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Test Compound: NTP 91/92 diet study

CAS Number: DIET9192

Date Report Requested: 10/20/2014 Time Report Requested: 18:17:03

First Dose M/F: NA / NA

F 344/N Rat FEMALE	07F	91F	92F
MUSCULOSKELETAL SYSTEM			
Bone	(1)	(0)	(0)
NERVOUS SYSTEM			
Brain	(0)	(0)	(1)
RESPIRATORY SYSTEM			
Lung	(56)	(57)	(59)
Alveolus, Infiltration Cellular, Histiocyte	33 (59%)	14 (25%)	23 (39%)
Artery, Mineralization	38 (68%)	36 (63%)	41 (69%)
Bronchus, Inflammation, Acute		1 (2%)	
Congestion	3 (5%)	1 (2%)	5 (8%)
Hemorrhage		1 (2%)	
Hyperplasia, Adenomatous	4 (7%)	5 (9%)	6 (10%)
Infiltration Cellular, Histiocyte	1 (2%)		
Inflammation, Chronic	4 (7%)	4 (7%)	5 (8%)
SPECIAL SENSES SYSTEM			
Eye	(0)	(0)	(2)
Bilateral, Degeneration			1 (50%)
Degeneration			1 (50%)
Lacrimal Gland	(0)	(1)	(0)
Zymbal's Gland	(1)	(0)	(0)
URINARY SYSTEM			
Kidney	(56)	(58)	(59)
Cyst	1 (2%)		1 (2%)
Hemorrhage	1 (2%)	1 (2%)	. ,
Hydronephrosis			1 (2%)
Infiltration Cellular, Lymphocyte			1 (2%)
Mineralization	2 (4%)		
Nephropathy	21 (38%)	12 (21%)	10 (17%)

a - Number of animals examined microscopically at site and number of animals with lesion

Test Compound: NTP 91/92 diet study

Species/Strain: Rat/F 344/N CAS Number: DIET9192

Date Report Requested: 10/20/2014 Time Report Requested: 18:17:03 First Dose M/F: NA / NA

Lab: NIEHS

F 344/N Rat FEMALE	07F	91F	92F
Pigmentation	13 (23%)	10 (17%)	8 (14%)
Renal Tubule, Cyst	1 (2%)		
Renal Tubule, Degeneration			1 (2%)
Renal Tubule, Hyperplasia			1 (2%)
Vacuolization Cytoplasmic	1 (2%)		
Urinary Bladder	(54)	(56)	(57)
Fibrosis	1 (2%)		
Hemorrhage	1 (2%)		
Hyperplasia	1 (2%)		
Infiltration Cellular, Lymphocyte	11 (20%)	12 (21%)	17 (30%)

^{**} END OF REPORT **

Experiment Number: 92004-01

Test Type: CHRONIC